GARDINER TECHNOLOGY

The Gardtec *370*

Installation Instructions

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PR4656Rev1.1

IMPORTANT!

Input:	**AC230V +/-10% ~50Hz 200mA Max. 49W Max**
Nominal Temp Range:	**0 - 50°C**
	For Indoor Use Only

This equipment is intended only for use as a Security Alarm Control Panel. Adequate ventilation away from heat and humidity must be provided. The unit must be fixed securely to a non-flammable surface using suitable fixings.

All mains wiring must be to BS7671 (1992) IEEE wiring regulations (or appropriate international regulatory standards). See Mains Supply Connection section within this manual for more detailed instructions.

Provision is provided for an earth connection within the mains input connector block, this connection is for protection of the wiring only and is not functional for the unit.

All wiring must be protected from sharp or jagged edges.

All Low voltage (alarm) wiring must be to the appropriate international regulatory standards and comply to good wiring practice.

Replacement fuses should be of the same type and rating conforming to IEC 127.

The maximum current draw from the unit for all output combinations **must not exceed 1Amp**

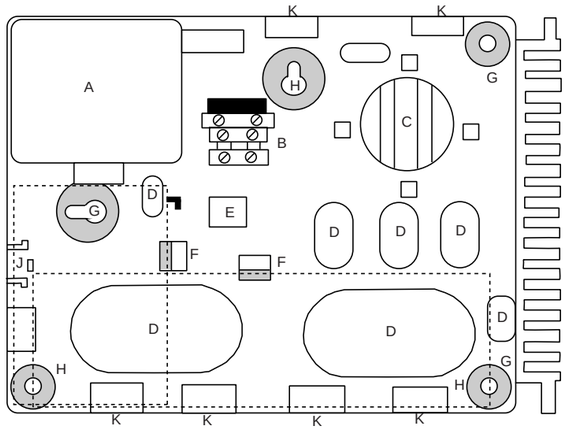
The unit is intended for use with a suitable re-chargeable lead acid battery permanently connected to the appropriate terminals.

All documentation and manuals must be thoroughly read by suitably qualified installation personnel prior to installation.

The unit has no user serviceable parts inside. Internal access should only be by suitably qualified personnel.

WARNING: **No paper should be stored within the unit**.

Fig1. Gardtec *370* Base (Fixing Points, Cable Entries & Battery Positions)



A Transformer

B Mains Connector Block

C Speaker Position (optional)

D Cable Entries

E Rear Tamper Switch Position (optional)

F Battery Retaining Clips

G Vertical Fixing Points

H Horizontal Fixing Points

J Spare Fuse Holder

K Trunking Entries

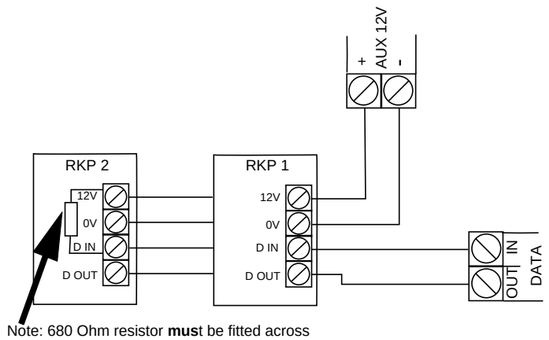
Remote Keypads

Up to four remote keypads may be fitted to the GARDTEC *370* control panel. The GARDTEC *370* LED RKP has a twin seven segment display, backlit keypad and an integral speaker.

A four core connection will be required between the control panel data port and remote keypad(s), all keypads must be in a 'daisy chain' format as shown in Fig2. below.

Note: **The 680 Ohm EOL (End Of Line) resistor (supplied with the keypad) must only be fitted to the last keypad in the chain as shown in Fig2. If only one RKP is used the resistor should be fitted in that RKP.**

Fig2. RKP Connection



Note: 680 Ohm resistor **mus**t be fitted across 12V & D IN on the last RKP in the chain

If Gardtec *580* or ACE RKPs are used for additional keypads placing the EOL link in the ON position will substitute for the 680 Ohm resistor in the last RKP in the chain.

Introduction

The Gardtec 370 Control Panel is a seven zone microprocessor based unit that has been designed to be suitable for domestic and small commercial installations. All zones are fully programmable by the engineer.

Upon completion of the installation the engineer may, if need be, re-program several factory set options so as to tailor the Control Panel to suit the requirements of the system.

It should be noted that if a new four digit engineer code starts with a 9 it will be locked into the system and may only be changed by using the code again (default to factory settings will have no effect).
We recommend that this engineers manual and the user manual are read and fully understood before any installation of the system is carried out.

Planning the Control Panel Location

Consideration in locating the fixing position of the Control Panel should be given to:

Access for the routing of cables for the system from detection devices, sounders (internal and external), remote keypads, mains, etc.

The fixing of a 3 amp unswitched fused spur.

When fitting the RKP(s) consideration should be given to:

Operation of the keypad.

Readability of the display.

The Position of the underside flap retaining screw.

The Panel should be fixed to the wall using appropriate wall plugs and No.8 screws at least 30mm long. Do not tighten the screws at this stage, wait until all your wiring is in place.

Mains Supply Connection

A 220/240V a.c supply should be taken directly from the consumer unit. In order to comply with the requirements of B.S 4737 this should be via a 3 Amp unswitched fused spur.

Fig3. Output Connections

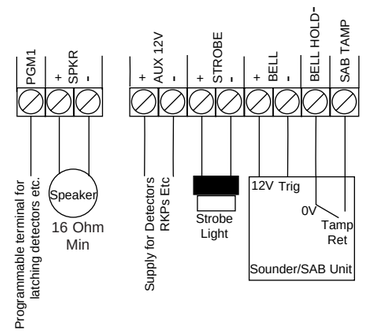
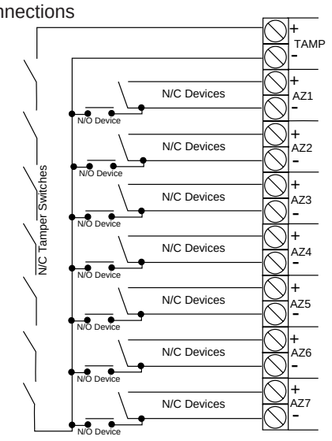


Fig4. Input Connections



Output Terminal Descriptions

Speaker Terminals
This pair of terminals provide connection for:-

Keypad Speaker(s)

Optional 32 Ohm Panel Speaker

Any Extension Speaker(s)

A speaker is supplied in each keypad. If any additional speakers are fitted they should present a minimum impedance of 16 Ohm.

PGM 1 Terminal
This terminal provides the switch +ve (or set +ve) required by most types of latching detectors. The terminal is an open collector output held at 12V through an integral 1k resistor. Max current sink into this terminal is 50mA. This terminal is programmable for other uses if required.

PGM Options

Pulse On	Switch +ve	Pulse Off
Bell	Strobe	Exit / Entry
Test	Int Alarm	

A more detailed description is given in the programmable options description (page 12).

Power Supply Rating
It should be noted that the Gardtec 370 has 1 Amp available for the full system. Sounders, detectors and other auxiliary items should be included when calculating current drawn by the system. Any damage caused through over-loading the Control Panel will not be covered by the warranty.

AUX 12V Terminals
This pair of terminals supply the + and - supply for the keypads and detectors. 1 Amp is available from these terminals (see power supply rating above).

Strobe Terminals
This pair of terminals are the output for the Strobe. The negative terminal is switched during an alarm period. A maximum of 1 Amp may be drawn from these terminals (see power supply rating above).

Bell Terminals
This pair of terminals are the output for the Bell or external sounder. The negative terminal is switched during an alarm period. A maximum of 1 Amp may be drawn from these terminals (see power supply rating above).

Initial Power Up

When the Control Panel is powered up it will be either set or unset dependent on the state of the Control Panel when it was powered down. The factory default state will be unset.

As power is applied all segments of the twin seven segment display will be lit for approx six seconds. During this period press 4 6 YES NO to ensure that the Control Panel is at factory settings. The display will then show set or unset.

Reset to Default Modes

Method 1
To gain temporary access to the factory default settings remove the link marked LK2 R/S on the P.C.B (this will give temporary access to the default codes 5678 for user and 1234 for engineer). See note below.

Method 2
Apply power to the panel and press 00 within the first 5 seconds.

1) Down power the panel again and leave for at least 10 seconds.
2) Re-apply either the mains or battery supply.
3) Press 4 6 YES NO within the first 5 seconds.

The Control Panel is now back to factory defaults.

Note: The two methods shown above will have no effect on the engineer code if it started with a '9'. If this is the case, only re-use of the programmed engineer code will allow it to be changed.

System Programming

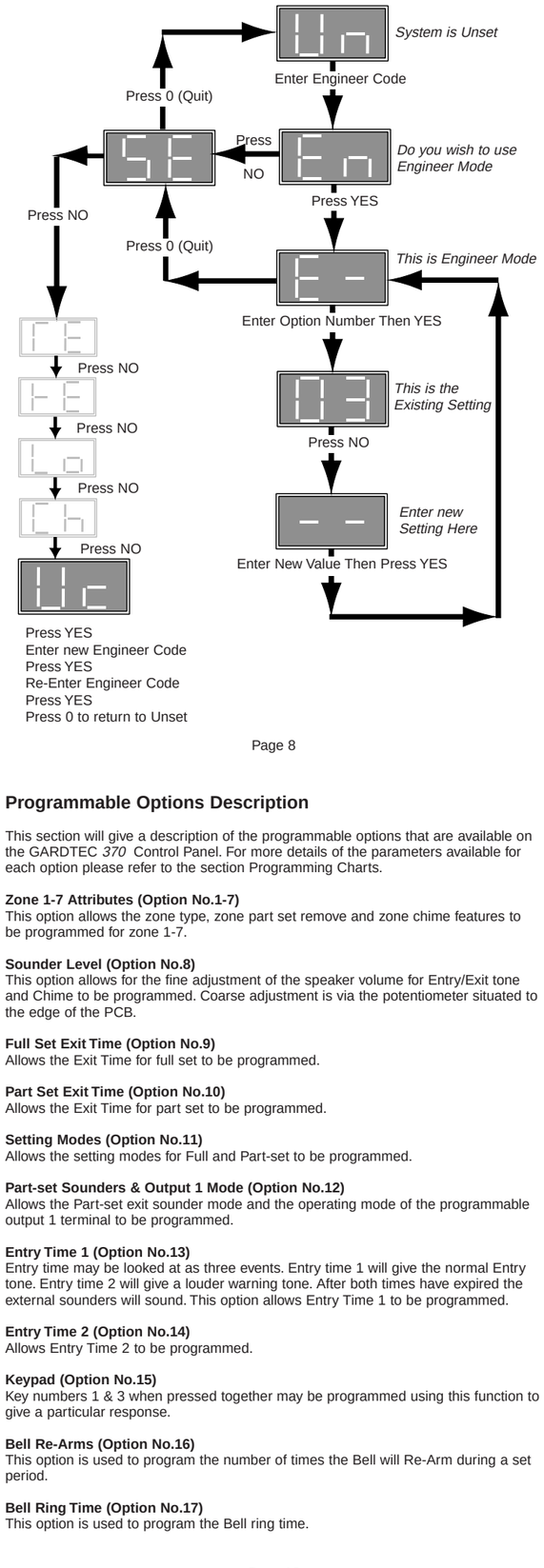
The system may be programmed by the engineer by use of the engineer code (1234 factory default). Other Engineer/User functions are also available to the engineer, these are as follows.

Set Unset Remove Test Log Chime

Note: Details of the above functions are given in the User Manual.

Program Engineer Code
Programming of the Engineer Code is only possible via the Engineer Code (e.g 1234). See Engineer Programming Flow Chart (overleaf).

Fig5. Engineer Programming Flow Chart



MENU No	FUNCTION	OPTIONS AVAILABLE		DEFAULT
1	Zone1 Attributes	**LEFT DIGIT** 0=12Hr 1=E/E 2=Access 3=Panic 4=24Hr 5=Fire 6=Alert 7=Exit Term 8=Part E/E	**RIGHT DIGIT** 0=Full Set 1=Part1 2=Part2 3=Part1&2 4=Full Set+Chime 5=Part1+Chime 6=Part2+Chime 7=Part 1&2+Chime	14
2	Zone 2 Attributes	**As Zone1 Options**		80
3	Zone 3 Attributes	**As Zone1 Options**		00
4	Zone 4 Attributes	**As Zone1 Options**		01
5	Zone 5 Attributes	**As Zone1 Options**		02
6	Zone 6 Attributes	**As Zone1 Options**		00
7	Zone 7 Attributes	**As Zone 1 Options**		00
8	Sounder Level	**CHIME LEFT DIGIT** 0 - 9	**ENTRY/EXIT RIGHT DIGIT** 0 - 9	55
9	Full Set Exit Time	00 - 99seconds		30
10	Part Set Exit Time	00 - 99seconds		30
11	Setting Modes	**FULL SET LEFT DIGIT** 0=Exit Term 1=E/E Door 2=Time 3=Time+E/E	**PART SET RIGHT DIGIT** 0=Exit Term 1=E/E Door 2=Time 3=Time+E/E	22

MENU No	FUNCTION	OPTIONS AVAILABLE		DEFAULT
12	Part Set Sounders & Output 1 Mode	**PART SOUNDERS LEFT DIGIT** 0=All Parts silent 1=Part 2 silent 2=Parts1&3 silent 3=All Parts Audible	**PROGRAMMABLE OUTPUT1 PGM1 RIGHT DIGIT** 0=Pulse On 1=SW+ 2=Pulse Off 3=Bell 4=Strobe 5=Entry/Exit 6=Test 7=Int. Alarm	31
13	Entry Time 1	00 - 99seconds		30
14	Entry Time 2	00 - 99seconds		10
15	Keypad	**ALERT KEYS 1&3 LEFT DIGIT** 0=Off 1=Panic 2=Fire 3=Alert	**RIGHT DIGIT** Always 0	10
16	Bell Re-Arms	00 Re-Arms - 99 Re-Arms		99
17	Bell Ring Time	00 minutes - 99 minutes		20
18	Not Used	Always 00		00
19	Bell Mode	**BELL TYPE LEFT DIGIT** 0=SAB 1=SCB	**TAMPER RING RIGHT DIGIT** 0=Off 1=On	00
20	Not Used	Always 00		00
21	Reset Modes	**LEFT DIGIT** Always 0	**RESET MODE RIGHT DIGIT** 0=Any Code 1=Master Code 2=Anti-Code 3=Engineer Code	01
22	Service Timer	00weeks - 98weeks.	99 = Off	99

Resetting After an Alarm

Four reset modes are available after an alarm. These are as follows.

Any Code
The system will reset the next time Any Code is used to set the system.
Master Code
The system will only reset if the Master Code or Engineer code is used to set the system.
Engineer Code
The system will only reset if the Engineer Code is used to set the system.
Anti-Code
The system may only be reset by use of an Anti-Code.
The engineer code may be used to override the Anti-Code Reset.
To Reset System:-
1) Enter Code of correct type (see above).
2) Proceed to set the system.
3) If a set is not required re-enter the code to abort setting.
To Reset by Anti-Code:-
1) Make a note of the Code given by the display.
2) Using the Gardiner Technology Anti-Code software on a P.C or an Anti-Code Generator enter the four digit source code given by the Panel.
3) Enter the resulting four digit Anti-Code into the Control Panel.

Zone Type Terminology

The terminology used for the various zone types are explained in this section.

12 Hour	Zone active when Control Panel is Set
Access	Will allow to pass through on Exit. Will allow to pass through on entry only if entry/exit is opened first
24 Hour	Internal sounder if Unset. Full alarm if Set.
Entry/Exit	Zone used as last exit point or first entry point.
Part E/E	As Access if Control Panel is Full Set As entry/exit if Control Panel is Part Set
P.A	24 Hour Personal Attack. Active if Control Panel is Set or Unset
Alert	Internal sounder only. Recorded to Log
Fire	Will give Fire alarm when activated (pulsed external sounders) with panel set or unset.
Exit Terminator	With Panel programmed to set with exit terminator the panel will only set when zone is activated during exit.

Programmable Options Description

This section will give a description of the programmable options that are available on the GARDTEC *370* Control Panel. For more details of the parameters available for each option please refer to the section Programming Charts.

Zone 1-7 Attributes (Option No.1-7)
This option allows the zone type, zone part set remove and zone chime features to be programmed for zone 1-7.

Sounder Level (Option No.8)
This option allows for the fine adjustment of the speaker volume for Entry/Exit tone and Chime to be programmed. Coarse adjustment is via the potentiometer situated to the edge of the PCB.

Full Set Exit Time (Option No.9)
Allows the Exit Time for full set to be programmed.

Part Set Exit Time (Option No.10)
Allows the Exit Time for part set to be programmed.

Setting Modes (Option No.11)
Allows the setting modes for Full and Part-set to be programmed.

Part-set Sounders & Output 1 Mode (Option No.12)
Allows the Part-set exit sounder mode and the operating mode of the programmable output 1 terminal to be programmed.

Entry Time 1 (Option No.13)
Entry time may be looked at as three events. Entry time 1 will give the normal Entry tone. Entry time 2 will give a louder warning tone. After both times have expired the external sounders will sound. This option allows Entry Time 1 to be programmed.

Entry Time 2 (Option No.14)
Allows Entry Time 2 to be programmed.

Keypad (Option No.15)
Key numbers 1 & 3 when pressed together may be programmed using this function to give a particular response.

Bell Re-Arms (Option No.16)
This option is used to program the number of times the Bell will Re-Arm during a set period.

Bell Ring Time (Option No.17)
This option is used to program the Bell ring time.

Bell Mode (Option No.19)
The Bell Mode Function allows the mode of the Bell to be programmed from SAB to SCB. In SAB mode the current for the sounder is supplied from the Control Panel unless the cable to the Bell box is cut. In SCB mode the current for the sounder is supplied by the sounder battery under all circumstances. The Bell Tamper mode if programmed ON will always trigger the external sounder from the control panel in the event of a Bell Tamper.

Reset Modes (Option No.21)
The reset modes are programmed using this function.

Service Timer (Option No.22)
The service timer period is programmed using this function. When service time expires the system will lock the user out. Extra service may be gained using the Anti-Code software. If the timer is set to 99 weeks the timer function is Off.

Display Messages

The Following System messages are possible.

'1 to 7'	Represent zones 1 to 7	**'E〓'**	System Full Setting
't'	Tamper zone	**'CA'**	Alert keys activated
'E═'	System Part 1 Setting	**'E═'**	System Part 2 Setting
'E—'	System Part 3 Setting	**Un'**	System is Unset
' 〓'	System Fully Set	**' ═'**	System Part 1 Set
' ═'	System Part 2 Set	**' —'**	System Part 3 Set
'AL '	An Alarm has occurred	**'Ac'**	Anti-Code reset required
'Fb'	Fuse Fail or Battery Fault	**'Ct'**	RKP Tamper
'bb'	Bell box Tamper	**'Pc'**	Mains Power Cut
'Cb'	Control Box Tamper		
'En'	Engineer Reset required (or Service Timer activated).		

Display Messages (Log)

Apart from the System and Status displays the following messages may also appear whilst viewing the Log.

'S〓'	System Full Set	**'S═'**	System Part 1 Set
'S═'	System Part 2 Set	**'S—'**	System Part 3 Set
' o1 '	Unset User 1	**' o2 '**	Unset User 2
' o3 '	Unset User 3	**' o4 '**	Unset User 4
' o5 '	Unset User 5	**' o6 '**	Unset User 6
' o7 '	Unset User 7	**' o8 '**	Unset User 8
' o9 '	Unset User 9	**' o0 '**	Unset User 0 (Engineer)
' AL '	Alarm has occurred	**' rE '**	Watchdog reset

' 1 to 7 ' (flashing) Zone 1 to 7 was removed when system was set.

Gardtec *370* Specification

Power Input	240V a.c +/- 10% @50Hz
Max Loop Resistance	2K Ohm
Loop Delay Time	300 milliseconds
Fuses	
Mains	200mA Anti Surge
Aux	1A Quick Blow
Low Voltage Output	13.8V (typical) Regulated
Power Supply Rating	1A
Battery Sizes	12V 1.2A, 12V 2.0A
Construction	3mm Polycarbonate
Complies with	B.S 4737
Number of Zones	7 + Tamper
Display Type	2 x 7 segment LED
User Code Default	5678
Engineer Code Default	1234
Event Log Size	80
No. of User Codes	9
No. of Part Sets	3

Other Accessories

A complete range of accessories are available to compliment your Gardtec *370* security system. Some of this range is shown below:-

Gardtec *370* Speaker Kit (01-087)

A 32 Ohm speaker that clips into the Control Panel.

Rear Tamper (02-064)

The Gardtec Speech Dialler (04-069)

The Gardtec Speech Dialler offers communications between your security system and any telephone or selected pagers.

One Common message along with three Information messages may be programmed to be sent to up to four telephone numbers. The unit offers a full range of programmable features to ensure your message gets across.

Additional RKPs

Gardtec *370* LED RKP (01-144)
ACE RX & 2TX Kit (01-141)
ACE RX (01-136)
ACE TX (Key Fob) (01-130)

Up to four RKPs may be fitted to the Gardtec *370* Control Panel.

ACE offers Setting, Unsetting, Part Setting & Resetting via high security Infra-Red keyfobs. ACE is available as compact stand alone units which are fully compatible with the Gardtec 370 Control Panel.